Ranunculus flabellaris (Ranunculaceae) new to the flora of Texas

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ABSTRACT

Ranunculus flabellaris (Ranunculaceae) is documented as new to the flora of Texas. A population was recently found in a slough along the Canadian River in Hemphill Co., Texas, and a collection from 1947 also in Hemphill Co. was discovered. *Published online* ***www.phytologia.org*** *Phytologia 106(3): 39-42 (September 23, 2024). ISSN 030319430.*

KEY WORDS: Ranunculaceae, yellow water buttercup, Texas, Hemphill County, *Ranunculus*.

Ranunculus flabellaris Raf., commonly known as yellow water buttercup was recently documented in April 2024 in Hemphill Co. In addition, a review of herbarium collections resulted in discovery of a collection of *Ranunculus flabellaris* also from Hemphill Co., Texas in 1947 at Robert Bebb Herbarium (Goodman 4332, Fig. 4). The species has not previously been reported for the state (BONAP 2015; Correll and Johnston 1970; Hatch et al. 1990; Turner et al. 2003; Weakley 2024).

Voucher: Texas. Hemphill Co.: Gene Howe Wildlife Management Area, slough along the Canadian River Floodplain (35.9195632, -100.3221176), 11 Apr 2024, *Brody Larkin* s.n. (TEX-LL); In pool near Canadian River, 6 miles NW of Canadian, 31 May 1947, *Geo. J. Goodman* & *Geo. H. Ware* 4332 (OKL).

Ranunculus flabellaris (Hilty 2019; Weakley 2024; and Wikipedia 2024) is an aquatic or semi-aquatic plant that grows in open water and mudflat areas in numerous wetland habitats. *Ranunculus flabellaris* is a perennial plant with stems that reach to 70 centimeters long. *Ranunculus flabellaris* floats in water and sometimes extends along moist to wet ground. *Ranunculus flabellaris* has the ability to root where it comes in contact with wet substrates. The leaves of *R. flabellaris* morphology is quite capricious as an aquatic plant. The leaves that develop in submerged water express different from those that develop in air on moist land. This phenomenon is called heterophylly where leaf morphology has been shown to be influenced by environmental factors such as temperature and the concentration of abscisic acid. In this species the leaves that develop in the open air have rounded blades that are divided into several short, blunt, wide lobes. Leaves that develop underwater have narrow, even threadlike lobes. The group of flowers of *R. flabellaris* are made up of one to twelve flowers that are held above the water line. Each flower average about 20 mm across and consists of 5-6 yellow petals. The flowers contain 5 light green to pale yellow

sepals with a ring of many yellow to golden stamens, and a central head of pistils that are light green to yellow in color. The fruit contains a small head of beaked achenes which each achene averaging 2 mm long and they are ovoid to flattened in shape. The achene contains beaks near their apices average 1.5 mm in length. The achenes have the ability to be carried by water currents or be blown by wind of the surface of water. *Ranunculus flabellaris* root systems are fibrous and fairly shallow with rootlets that develop from lower nodes of stems and root when contacted with moist soil. *Ranunculus flabellaris* typically flowers in early spring and was documented flowering at Gene Howe Wildlife Management Area from April through early June.

Figure 1. *Ranunculus flabellaris* in flower (left photo) and in aquatic habitat (right photo). Photos taken by Chip Ruthven, April 2024.

Figure 2. *Ranunculus flabellaris* emergent aquatic population in a slough at Gene Howe Wildlife Management Area, Hemphill Co., Texas. Photo taken by Brody Larkin, April 2024

Ranunculus flabellaris is native to much of northern half of North America, including southern Canada, but rare in the southern half. In states adjacent to Texas, *Ranunculus flabellaris* is absent from New Mexico and rare in Oklahoma, Arkansas, and Louisiana (Wikipedia 2024, Fig. 3).

Ranunculus flabellaris (Figs. 1 and 2) was found in a slough in Hemphill County. Dominant woody plants included *Populus deltoides*, *Salix nigra*, *Morus rubra*, *Celtis reticulata*, *Cephalanthus occidentalis*, *Ribes aureum*, *Toxicodendron radicans*, and *Vitis* sp. Dominant herbaceous vegetation included *Carex emoryi*, *C. pelita*, *Schoenoplectus acutus*, and *Melilotus* sp.

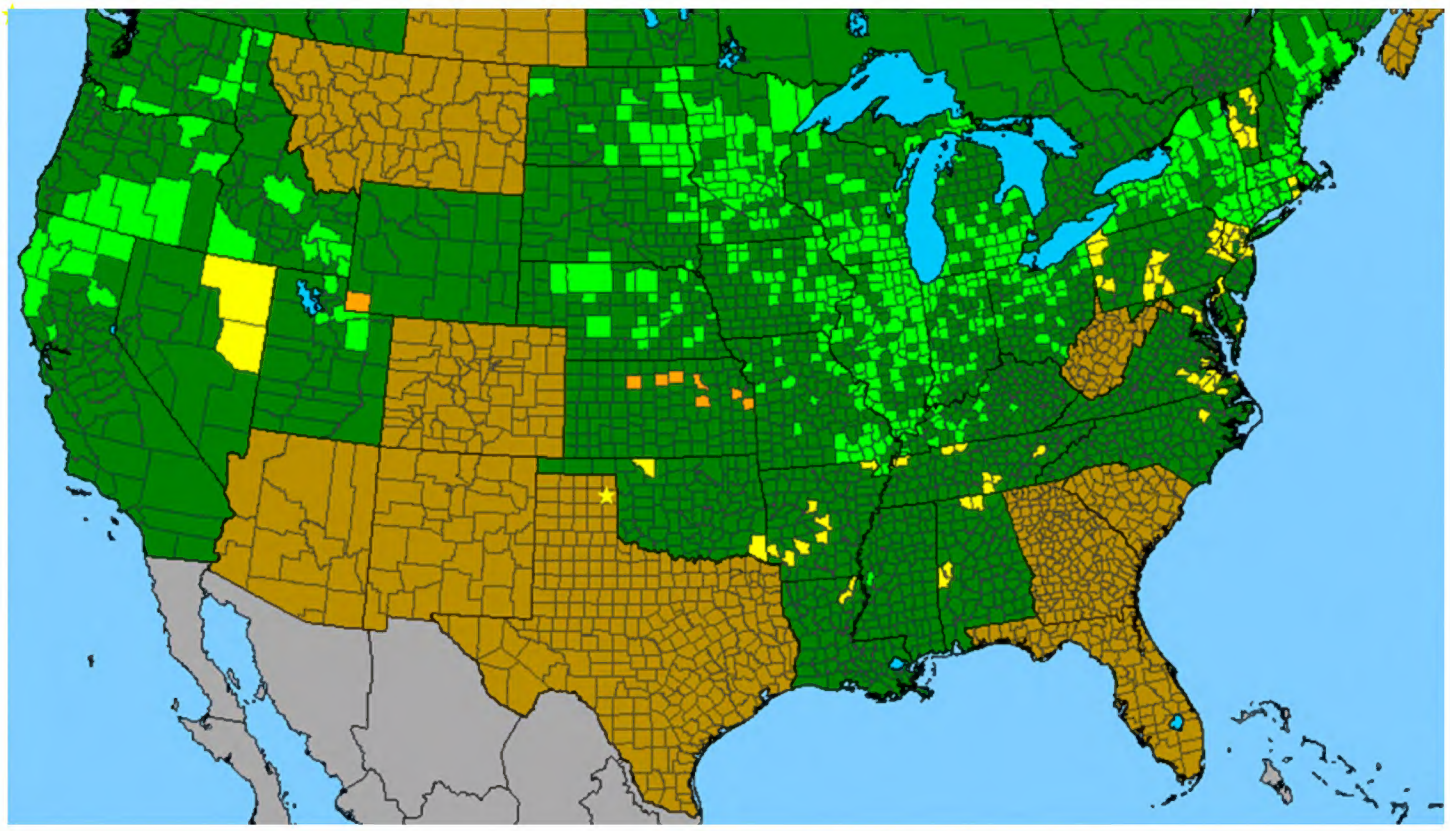

Figure 3. *Ranunculus flabellaris* range extension in northern Texas is represented by a yellow star in Hemphill County, TX on distribution map from BONAP (2015).

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Figure 4. *Ranunculus flabellaris* 1947 collection from Hemphill Co., Texas at Robert Bebb Herbarium, University of Oklahoma (OKL).

Stylisma patens (Convolvulaceae) documented in the West Gulf Coastal Plain of Louisiana

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ABSTRACT

Stylisma patens is reported for the West Gulf Coastal Plain of Louisiana. Aspects of morphology, habitat, and rarity are briefly discussed. *Published online* ***www.phytologia.org*** *Phytologia 106(3): 43-46. (September 23, 2024). ISSN 030319430.*

KEY WORDS: *Stylisma,* Louisiana, Longleaf pine ecosystems

The genus *Stylisma* contains about seven species of vining or sprawling herbs, all of which are endemic to the southeastern United States (Weakley 2024). The four species native to the West Gulf Coastal Plain (WGCP) are *S. humistrata, S. aquatica, S. pickeringii, and S. villosa* (Weakley 2024, Kartesz 2015). All but *S. villosa* are known to occur in Louisiana (Allen 2013). However, recent observations have documented the presence of another species for Louisiana and the WGCP, *Stylisma patens* (Desrousseaux) Myint.

Prior records of *S. patens* in Louisiana have been attributed to misidentifications of *S. humistrata* (Allen 2013), and one misidentification of *S. aquatica* was found in the present study (*Thomas 84937,* GA). The first recent record of *S. patens* is a specimen collected by Brian Sean Early in Natchitoches Parish (Kisatchie Unit, Kisatchie National Forest) in 2021 (*Early 2197*, LSU). In May of 2022, the first author collected specimens in Vernon Parish (Vernon Unit, Kisatchie National Forest) which could not be readily identified with Allen's (2013) Louisiana-specific keys (*Cobb s.n.*, KBL). These specimens key to *S. patens* in more comprehensive works (Allen 2023; Myint 1966; Weakley 2024), but some minor deviations warrant a piecewise description.

DISCUSSION

In the Louisiana material: the bracteoles are subopposite and typically less than 5mm (Fig. 1); the stylar branches are free to the base; the sepals are villous (Fig. 1); the flowers are always borne singly on the peduncles; the tips do not twine; the largest leaves on most specimens are less than 10mm wide (Fig. 1), though some individuals bear leaves up to 15mm wide.

All of the specimens were collected from xeric longleaf pine habitat, where the species seems to be common, sprawling in open patches of sand and under sparse vegetation (Figs. 2, 3). Both of the observed locales are currently under a fire rotation of 3-5 years. Associated taxa include *Pinus palustris, Toxicodendron pubescens, Tragia urticifolia, Cnidoscolus texanus, Schizachyrium scoparium, Schizachyrium tenerum, Sporobolus junceus, Andropogon gyrans, Alophia drummondii, Callicarpa americana, Rudbeckia hirta, Asclepias amplexicaulis, Buchnera americana, Sassafras albidum, Rhus copallinum, Euphorbia corollata, Eryngium yuccifolium, Pycnanthemum albescens, Tephrosia virginiana, T. onobrychoides, Desmodium spp.,* and *Stillingia sylvatica*. This species is apparently restricted to the most xeric areas of the savanna habitat.

Figure 1. Villous calyx (top), bracteoles subopposite and <5mm long (left), and larger leaf <10mm broad (right).

Figure 2. Typical bare sand microsite and sprawling habit of *S. patens*.

Figure 3. Typical ground cover physiognomy of the sandhill savanna habitat.

The Louisiana occurrences, found in Natchitoches and Vernon parishes, are separated by a large distance from any other observations. Figure 4 shows the Louisiana occurrences and SERNEC observations prior to 2021, though some collections have been found closer (approximately 150 km disjunct) in Mississippi than shown (Kartesz 2015). Since the species had previously been excluded, it has not been sought or tracked by the Louisiana Department of Wildlife and Fisheries (LDWF), Wildlife Diversity Program (WDP) prior to January of 2024. However, per personal communication with Brian Sean Early (LDWF) the WDP ranked this species as S1 (critically imperiled) and began tracking it after WDP Plant Taxa Team Meeting 6 held on January 18th, 2024. Notes compiled for us on the specimens at FTPK suggest that further collections of *S. patens* may have escaped notice (e.g. *Allen 15512*, FTPK); these and others (e.g. *Holmes 3331*, CM) require examination in-person to confirm their identity. *S. patens* should be sought elsewhere on the Kisatchie National Forest and in similar habitats and documented if found. Similar sites in eastern Texas also warrant further investigation.

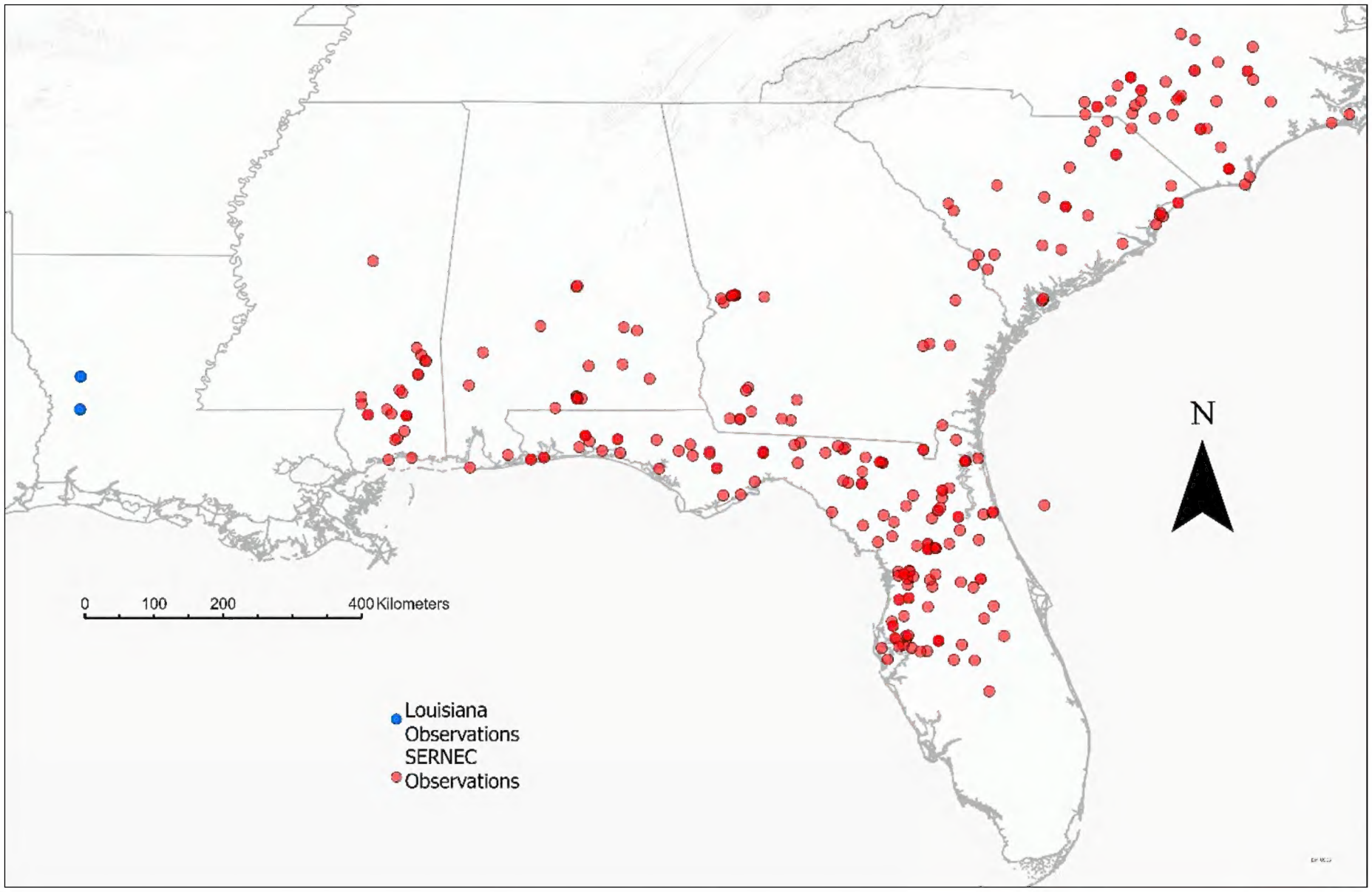

Figure 4. Map of Louisiana occurrences and SERNEC specimens pre 2021 (excluding *Thomas 84937,* GA and *Holmes 3331*, CM)

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